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SAN FRANCISCO PLANNING DEPARTMENT

CALIFORNIA ACADEMY OF SCIENCES PROJECT

PRELIMINARY DRAFT INITIAL STUDY

September 28, 2002

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PLANNING DEPARTMENT

City and County of San Francisco 1660 Mission Street, Suite 500 San Francisco, CA 94103-2414

(415) 558-6378 PLANNING COMMISSION FAX: 558-6409 ADMINISTRATION FAX: 558-6426 CURRENT PLANNING/ZONING FAX: 558-6409 LONG RANGE PLANNING FAX: 558-6426

September 28, 2002

TO: Responsible Agencies, Trustee Agencies, and Interested Parties

FROM: Paul E. Maltzer, Environmental Review Officer

RE: **Notice of Preparation of a Draft Environmental Impact Report**

The City and County of San Francisco Planning Department is the Lead Agency and will prepare an Environmental Impact Report for the following project:

The Notice of Preparation of a Draft Environmental Impact Report (EIR) and Notice that an EIR is Determined to be Required for the above-referenced project are being sent to you because you have expressed an interest in the proposed project, or because you have been identified by the Planning Department as potentially having an interest in the project. Notice of publication of these documents will be printed in a newspaper of general circulation on the day following the day that these notices were mailed to you. As stated in the enclosed Notices, the Planning Department has determined that pursuant to the California Environmental Quality Act (CEQA) an EIR must be prepared prior to any final decision regarding the project.

We need to know the views of your agency as to the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project.

Written comments on the scope of the EIR will be accepted until the close of business on October 28, 2002. Written comments should be sent to: Paul. E. Maltzer, Environmental Review Officer, San Francisco Planning Department, 1660 Mission Street, Ste. 500, San Francisco, CA 94103. Please include the name of a contact person in your agency. Thank you.

Paul. E. Maltzer
Environmental Review Officer

September 28, 2002
Date

DOCUMENTS DEPT.

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NOTICE THAT AN
ENVIRONMENTAL IMPACT REPORT (EIR)
IS DETERMINED TO BE REQUIRED

Date of this Notice: September 28, 2002

Lead Agency: Planning Department, City and County of San Francisco
1660 Mission Street - 5th Floor, San Francisco, CA 94103-2414

Agency Contact Person: Joy Navarrete **Telephone**: (415) 558-5975

Project Title: 2002.0782E – California Academy of Sciences Project

Project Sponsor: California Academy of Sciences, City and County of San Francisco Recreation and Park Department

Project Contact Person: Donald R. Young, (415) 456-2820

Project Address: 55 Academy Drive **Assessor's Block(s) and Lot(s)**: 1700/001

City and County: San Francisco

Project Description: The California Academy of Sciences is in Golden Gate Park (Lot 1 of Assessor's Block 1700) along the easterly edge of the Music Concourse within a P (Public Use) district and an OS (Open Space) Height and Bulk District. The project would be to rebuild the project on the site of the existing facilities. The project would include demolition of 11 of the existing 12 buildings, and the removal of approximately 73 existing parking spaces. The project would restore the Africa Hall building in place. The Academy would retain its general location and orientation. The new facility would include three main levels above grade, two levels below grade, and a loading area at the southern portion of the project site. The main features of the new Academy facility would be the main lobby and courtyard, public education and new exhibit spaces (including an aquarium, planetarium, and rainforest areas), natural history museum, environmental resource center, auditorium, classrooms, laboratories, research, collections, and administration space, restaurant and lunch room areas, a loading dock, approximately 15 service and Academy vehicle spaces and other museum-related uses. The new Academy building would be approximately 460 feet long and 280 feet wide, with the edges of the roof extending to approximately 520 feet long by 335 feet wide. The building would feature a landscaped roof, the base height of which would be under 40 feet. Above the base, the landscaped roof would undulate to accommodate the Academy's major programmatic components beneath, with the two peak elements over the planetarium and rainforest exhibits reaching a height of about 67 feet, or approximately 13 feet beyond the highest existing point (Morrison Planetarium). These two peaks would be set back approximately 150 feet from the roof's edge along Academy Drive. Trellised portions of the roof would extend beyond the perimeter walls. The floor area would increase from approximately 350,000 sq. ft. to approximately 380,000 sq. ft. The footprint would decrease from approximately 240,000 sq. ft. to approximately 205,500 sq. ft. This increase in area on a smaller footprint is possible because the newly constructed space would include two basement levels.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Section 15063 (Initial Study), 15064 (Determining Significant Effect), and 15065 (Mandatory Findings of Significance), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing of an Appeal to the Planning Commission of this Determination that an EIR is required: **October 28, 2002** at 5:00 p.m.

An appeal requires: 1) a letter specifying the grounds for the appeal; and
2) a $209.00 filing fee.

Paul E. Maltzer
Environmental Review Officer
Planning Department

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CALIFORNIA ACADEMY OF SCIENCES PROJECT
PRELIMINARY DRAFT INITIAL STUDY
Case No. 2002.0782E

I. PROJECT DESCRIPTION

The California Academy of Sciences (CAS) is planning a rebuilding project on the site of the existing Academy facility in Golden Gate Park. The CAS now consists of 12 buildings, built between 1916 and 1969, with renovations in 1977 and 1990. The project would include demolition and new construction involving 11 buildings, and the removal of approximately 73 existing parking spaces. The project would restore Africa Hall in place. The entrance hall to the Steinhart Aquarium would be rebuilt, incorporating the entry's existing design elements, such as the barrel vault and columns. North American Hall would also be rebuilt in a manner consistent with the classical features of Africa Hall.

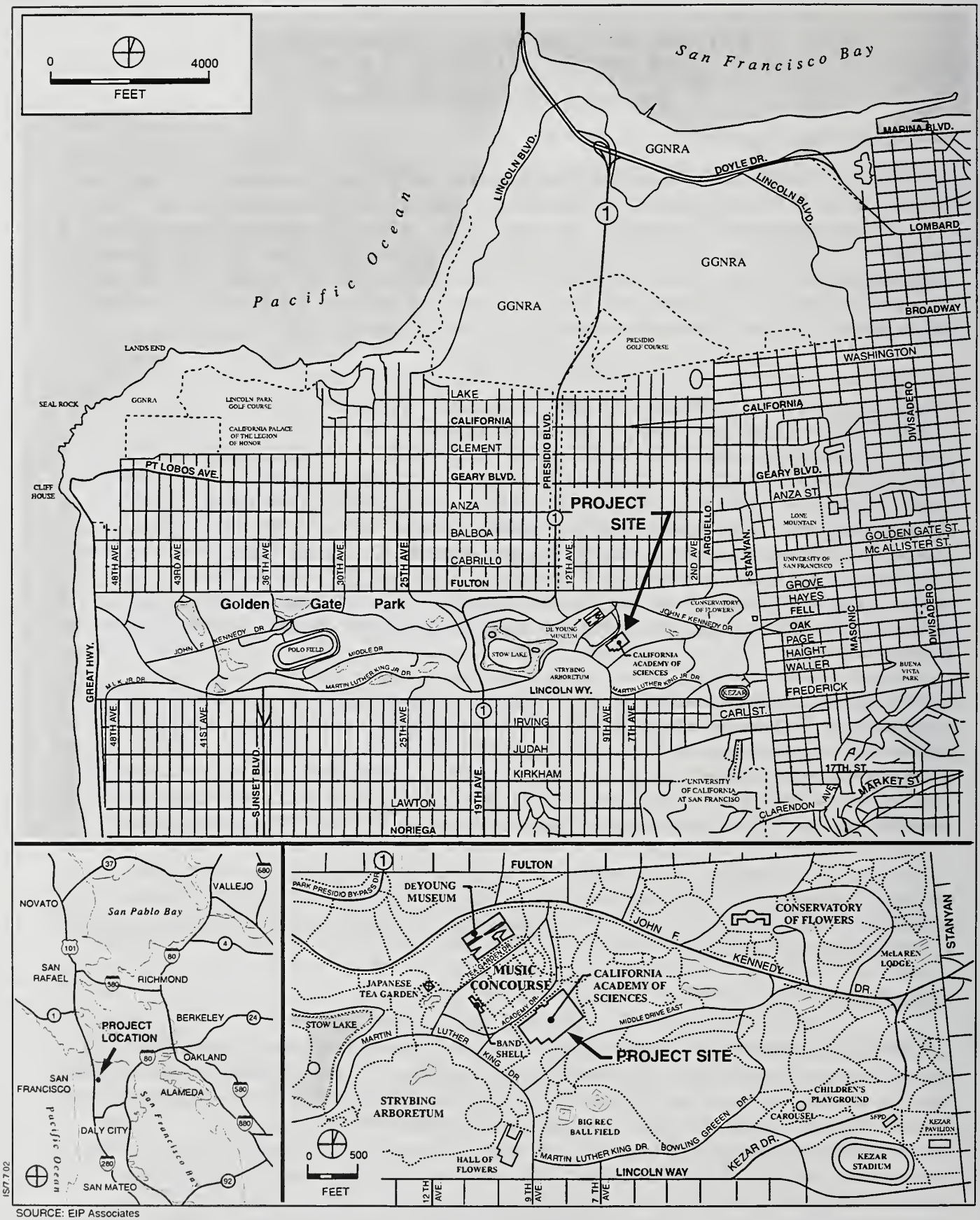
The California Academy of Sciences is in Golden Gate Park (Lot 1 of Assessor's Block 1700, which includes all of the approximately 1,017 acre park) along the easterly edge of the Music Concourse within a P (Public Use) district and an OS (Open Space) height and bulk district (See Figure 1). The parcel is owned by the City and County of San Francisco, and Golden Gate Park is under the jurisdiction of the San Francisco Recreation and Park Department. The Academy is managed and controlled exclusively by the Board of Trustees of the California Academy of Sciences. The Academy facility is accessible from Academy Drive and Middle Drive East. The Academy is bordered on the northwest by the Music Concourse (across Academy Drive East), on the southwest by the Shakespeare Garden, on the southeast by the Big Rec Ball Field (across Middle Drive East) and on the northeast by a meadow and woods within the park. The Music Concourse is a formal open public space characterized by regularly spaced trees, seating and other landscape improvements approximately ten feet below the grade of Academy Drive and Tea Garden Drive.

In 1995, the voters of San Francisco approved a $29,245,000 bond measure (Proposition C) for improvement of the Steinhart facility. In 2000, the voters approved a second measure (Proposition B) of $87,445,000 for improvement of the overall Academy facilities. The Academy retained a team of consultants, including architects, engineers, scientists, environmental and Building Code experts, and exhibit specialists, to further evaluate the existing facilities and design the new project, in coordination with other activities in the Concourse area. Those efforts have culminated in the proposed project.

The primary goal of building a new Academy is to provide a safe, modern facility for exhibition, education, conservation, research, exploration and explanation of the natural world. The Academy believes that the new building will enable it to become one of the world's most innovative and prestigious scientific and cultural institutions.

Project Features

The new Academy facility would consist of three principal components organized around a central exhibition space and open piazza - all enclosed under a single roof. The facility would include three main levels above grade, two levels below grade, and a loading area at the southern portion of the project site. Figures 2 through 9 identify schematic floor plans and elevations of the proposed facility. The main features of the new Academy facility would be the main lobby and courtyard, public education and new exhibit spaces (including an aquarium, planetarium, and rainforest areas), natural history museum, environmental resource center, auditorium, classrooms, laboratories, research, collections, and administration space, restaurant and lunch room areas, a loading dock, approximately 15 service and Academy vehicle spaces and other museum-related uses.

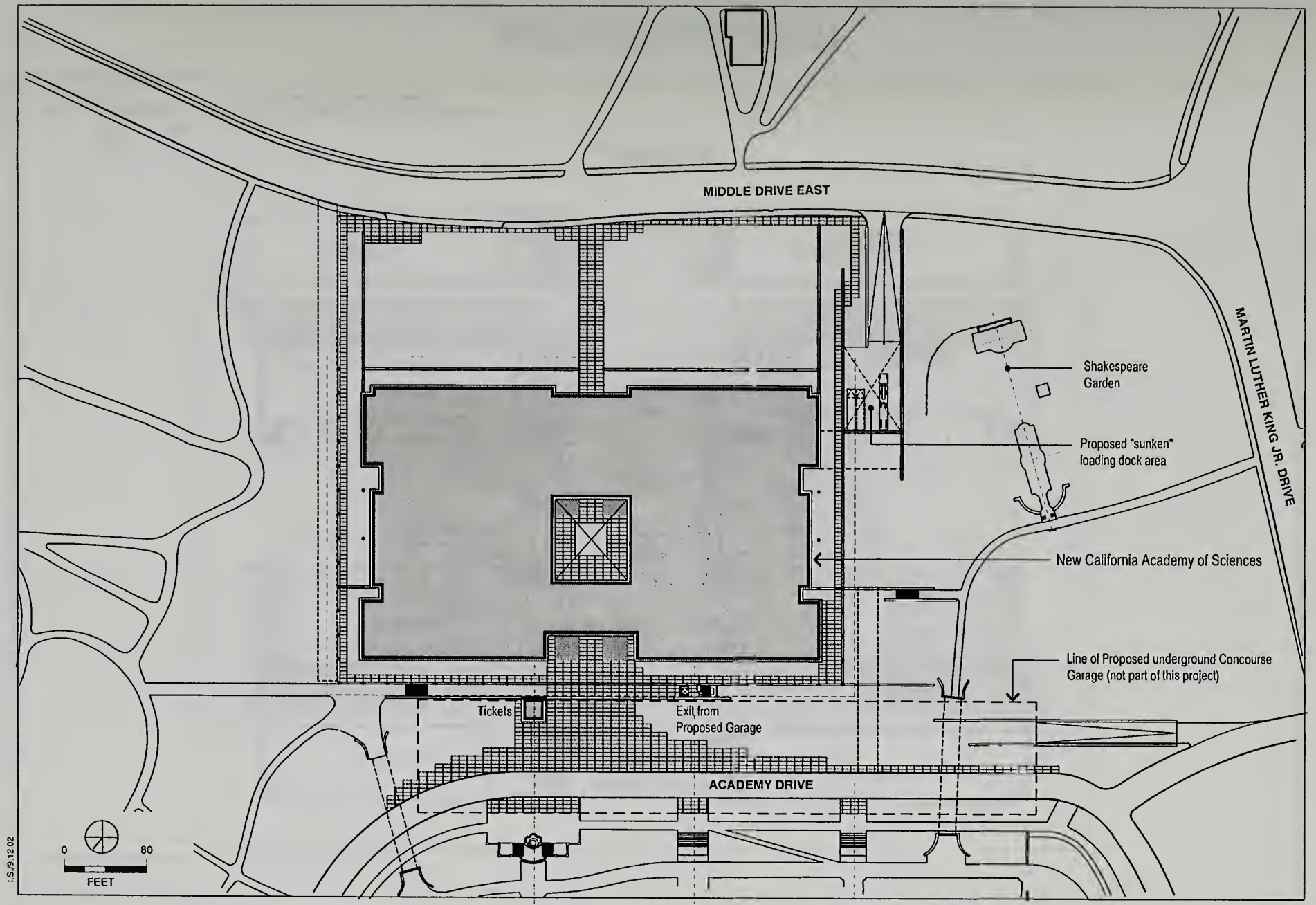


SOURCE: EIP Associates

CALIFORNIA ACADEMY OF SCIENCES PROJECT

FIGURE 1: PROJECT LOCATION

PRELIMINARY DRAFT--NOT REVIEWED FOR ACCURACY--SUBJECT TO REVISION

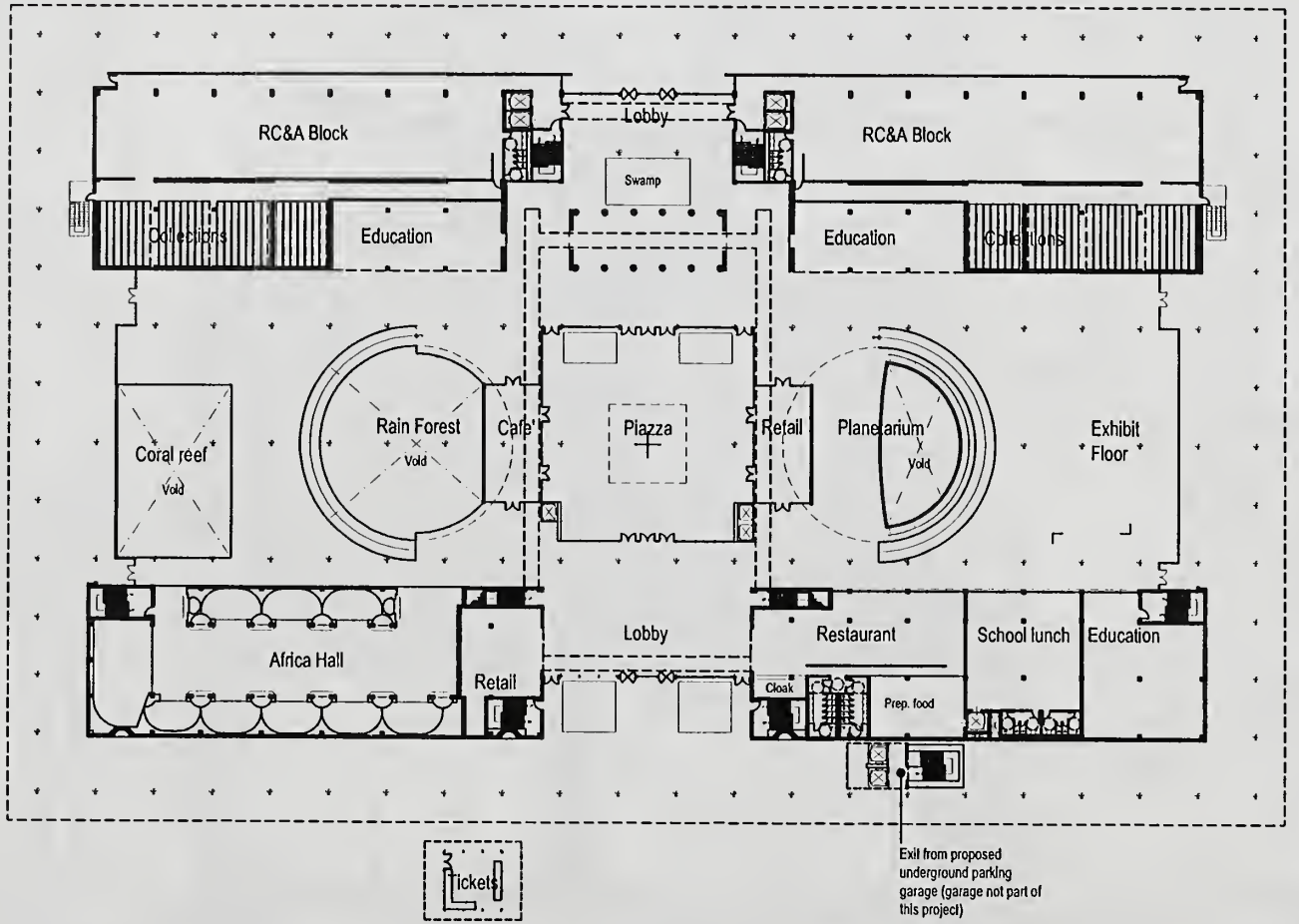


CALIFORNIA ACADEMY OF SCIENCES PROJECT

FIGURE 2: PROPOSED SITE PLAN

PRELIMINARY DRAFT--NOT REVIEWED FOR ACCURACY--SUBJECT TO REVISION

MIDDLE DRIVE EAST



ACADEMY DRIVE

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Note: RC&A Block = Research Collections and Administration
MEP= Mechanicel Electricel and Plumbing

I.S./9.11.02

SOURCE: Gordon H. Chong & Partners

CALIFORNIA ACADEMY OF SCIENCES PROJECT

FIGURE 3: FLOOR PLAN GROUND LEVEL L1

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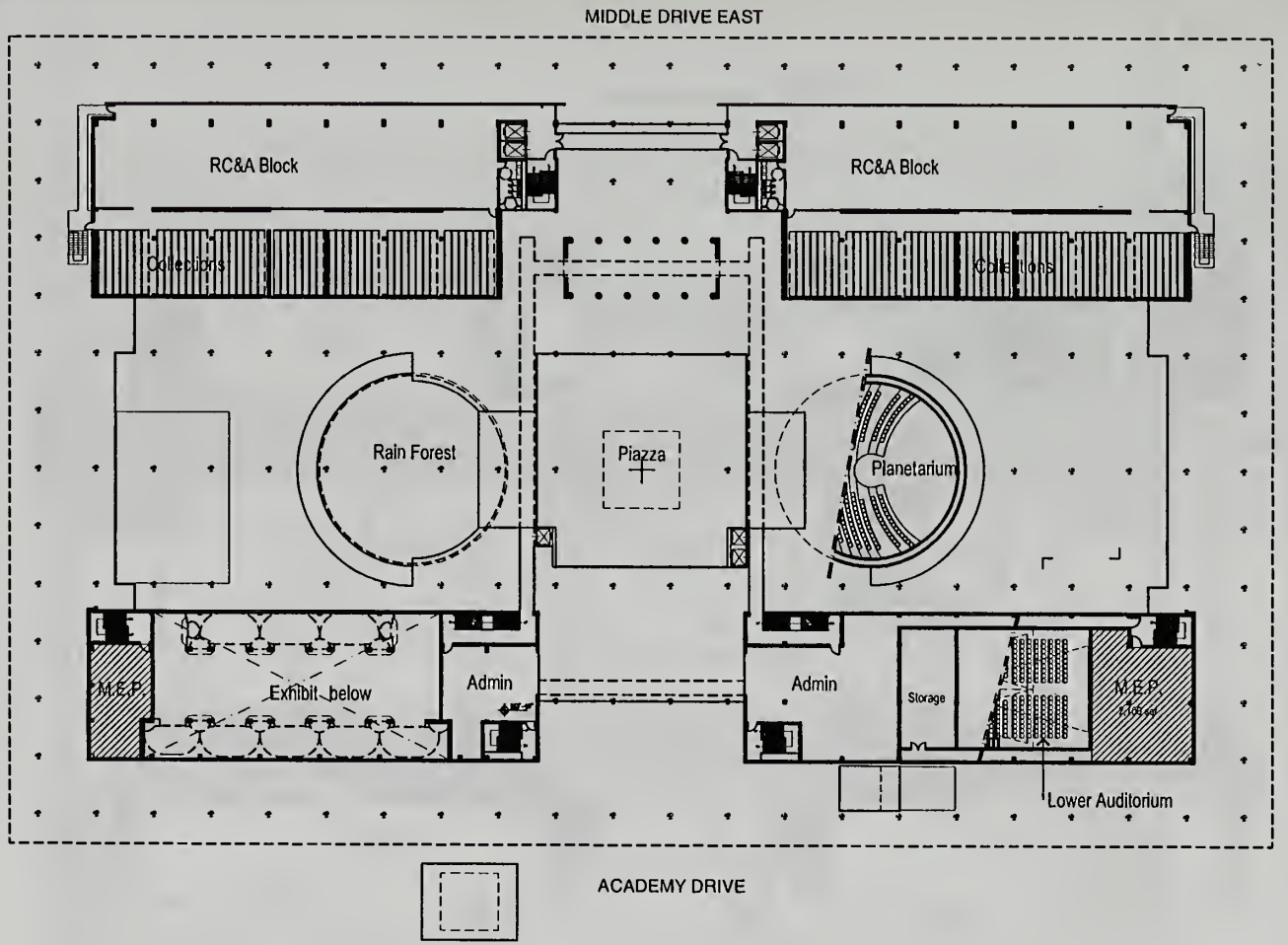

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Note: RC&A Block = Reseerch Collections and Administration
MEP= Mechenicel Electrical end Plumbing

I.S./9.12.02

SOURCE: Gordon H. Chong & Partners

CALIFORNIA ACADEMY OF SCIENCES PROJECT

FIGURE 4: FLOOR PLAN UPPER LEVEL L2

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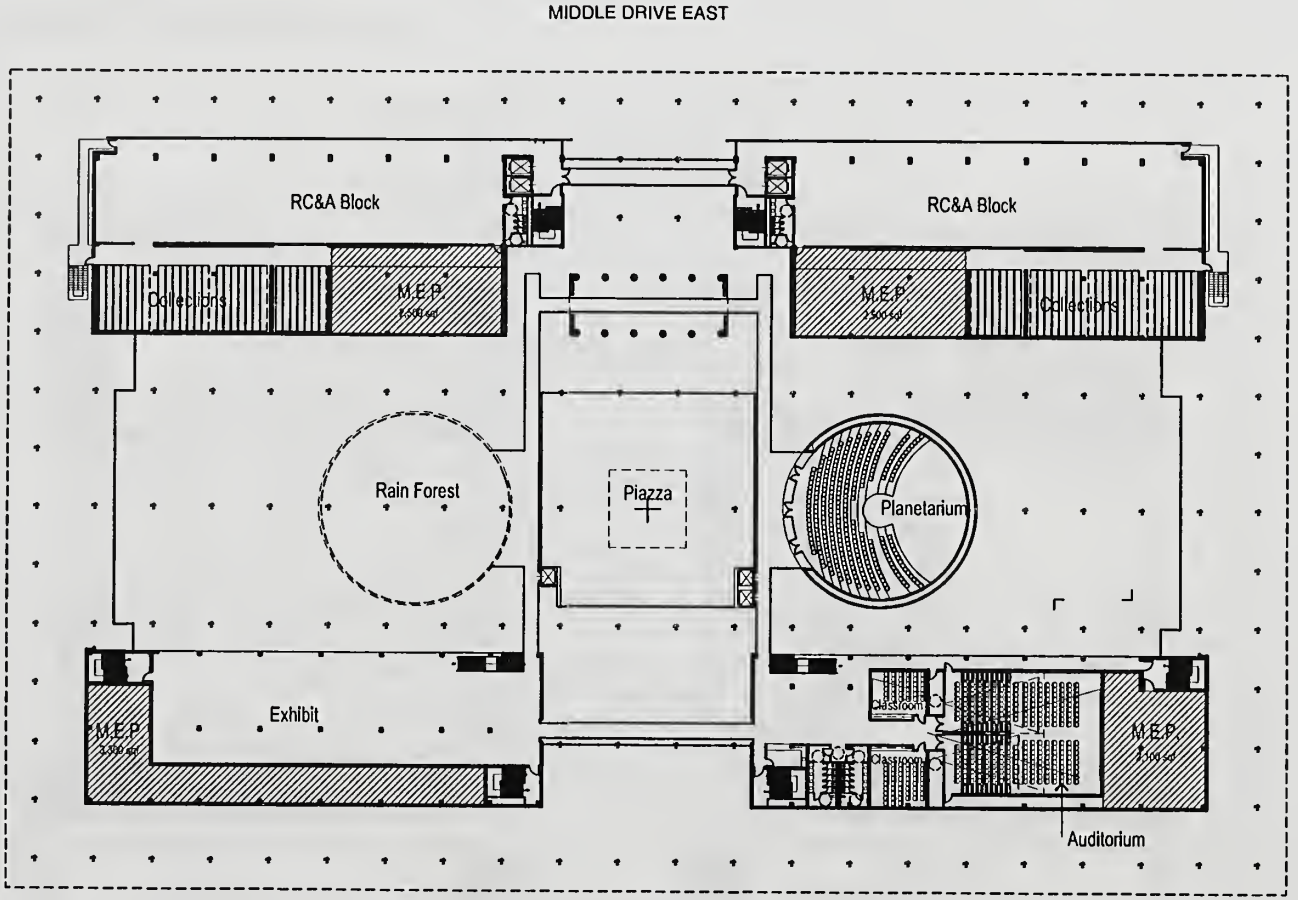

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Note: RC&A Block = Research Collections and Administretion
MEP= Mechanicel Electrical and Plumbing

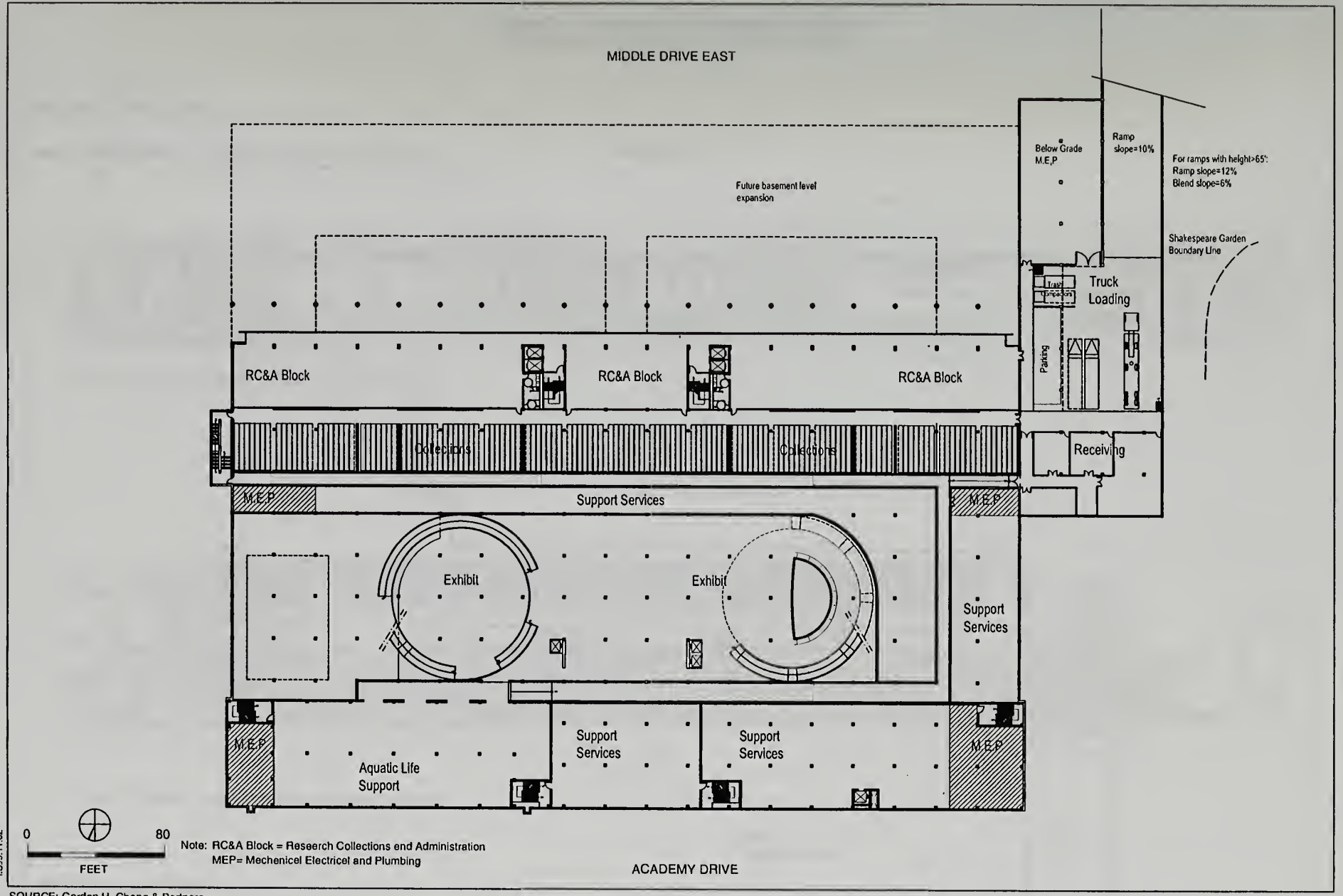
I.S./9.11.02

SOURCE: Gordon H. Chong & Partners

CALIFORNIA ACADEMY OF SCIENCES PROJECT

FIGURE 5: FLOOR PLAN UPPER LEVEL L3

PRELIMINARY DRAFT--NOT REVIEWED FOR ACCURACY--SUBJECT TO REVISION



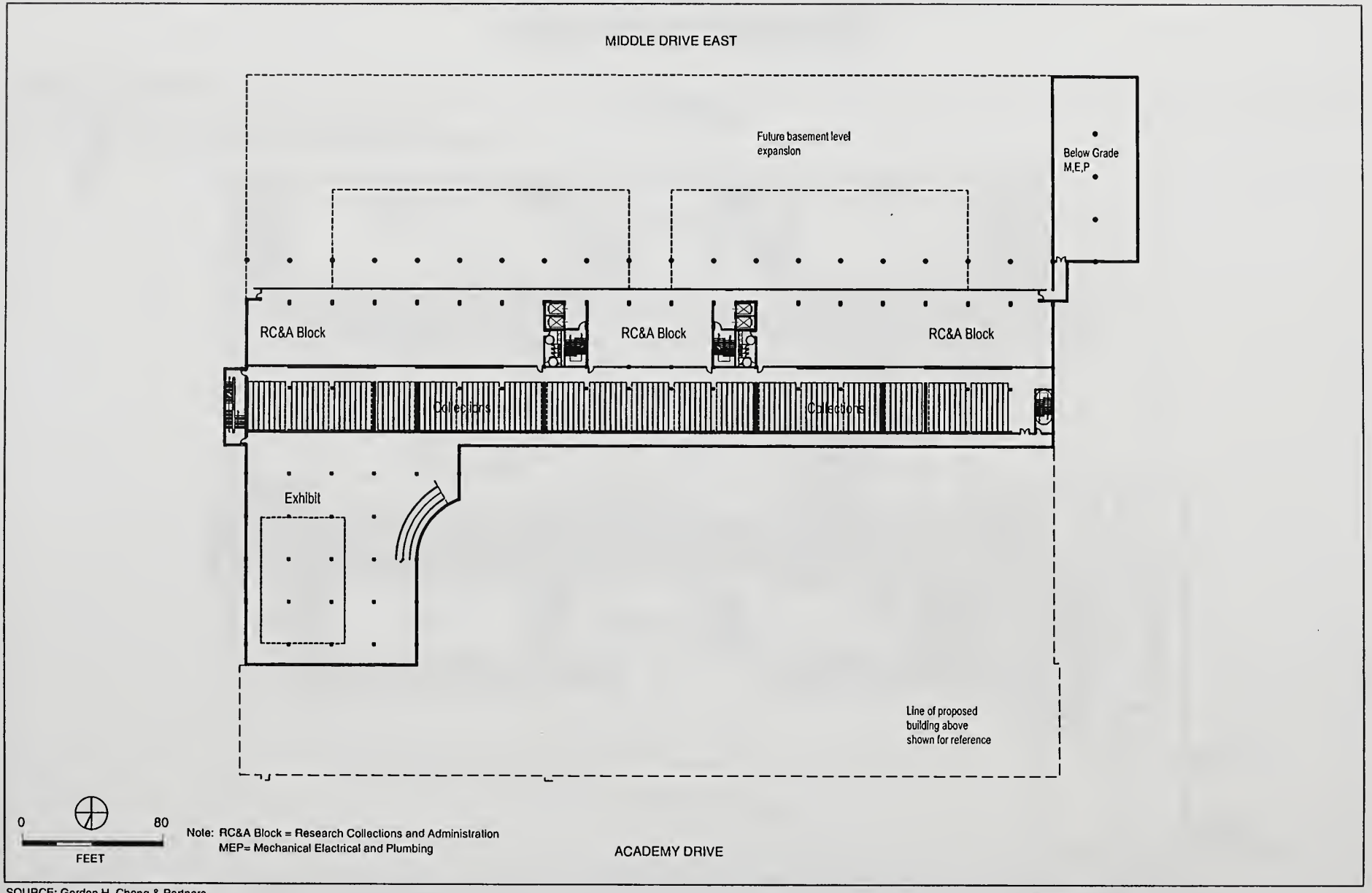
I.S./9.11.02

SOURCE: Gordon H. Chong & Partners

CALIFORNIA ACADEMY OF SCIENCES PROJECT

FIGURE 6: FLOOR PLAN BASEMENT LEVEL B1

PRELIMINARY DRAFT--NOT REVIEWED FOR ACCURACY--SUBJECT TO REVISION



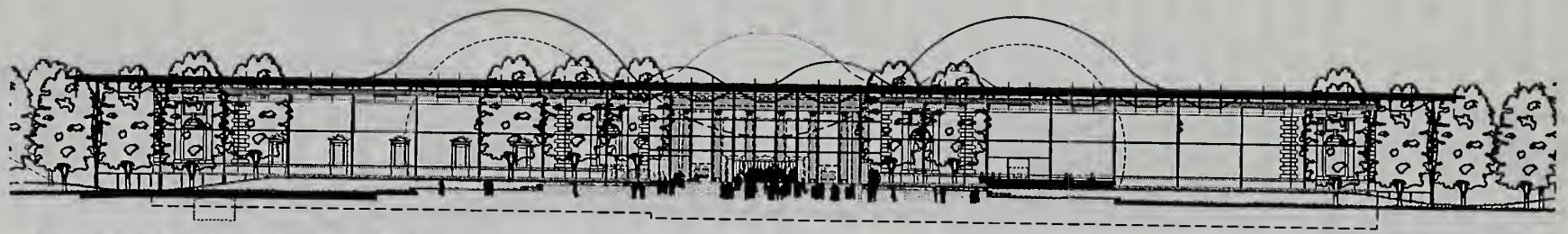
I.S./9.11.02

SOURCE: Gordon H. Chong & Partners

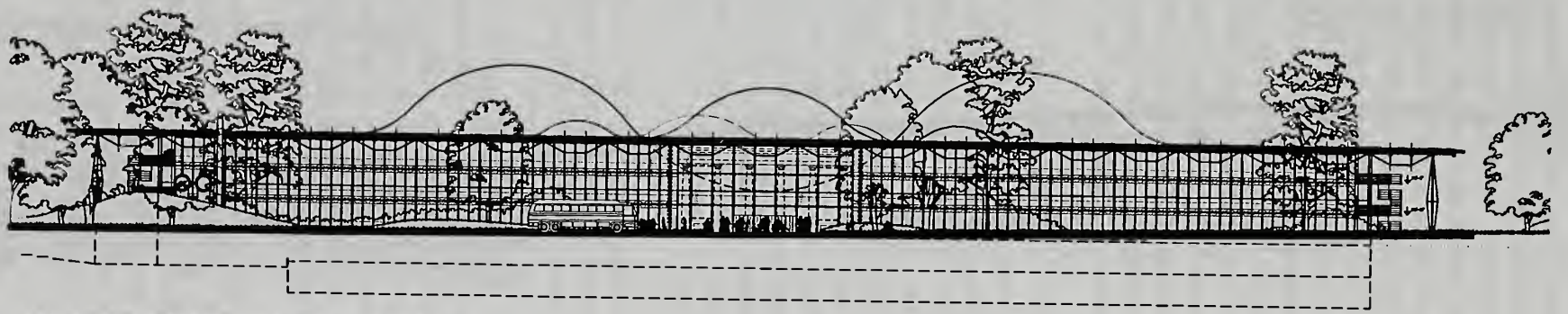
CALIFORNIA ACADEMY OF SCIENCES PROJECT

FIGURE 7: FLOOR PLAN BASEMENT LEVEL B2

PRELIMINARY DRAFT--NOT REVIEWED FOR ACCURACY--SUBJECT TO REVISION



NORTH ELEVATION (SEEN FROM MUSIC CONCOURSE)



SOUTH ELEVATION (SEEN FROM MIDDLE DRIVE EAST)

0 80

FEET

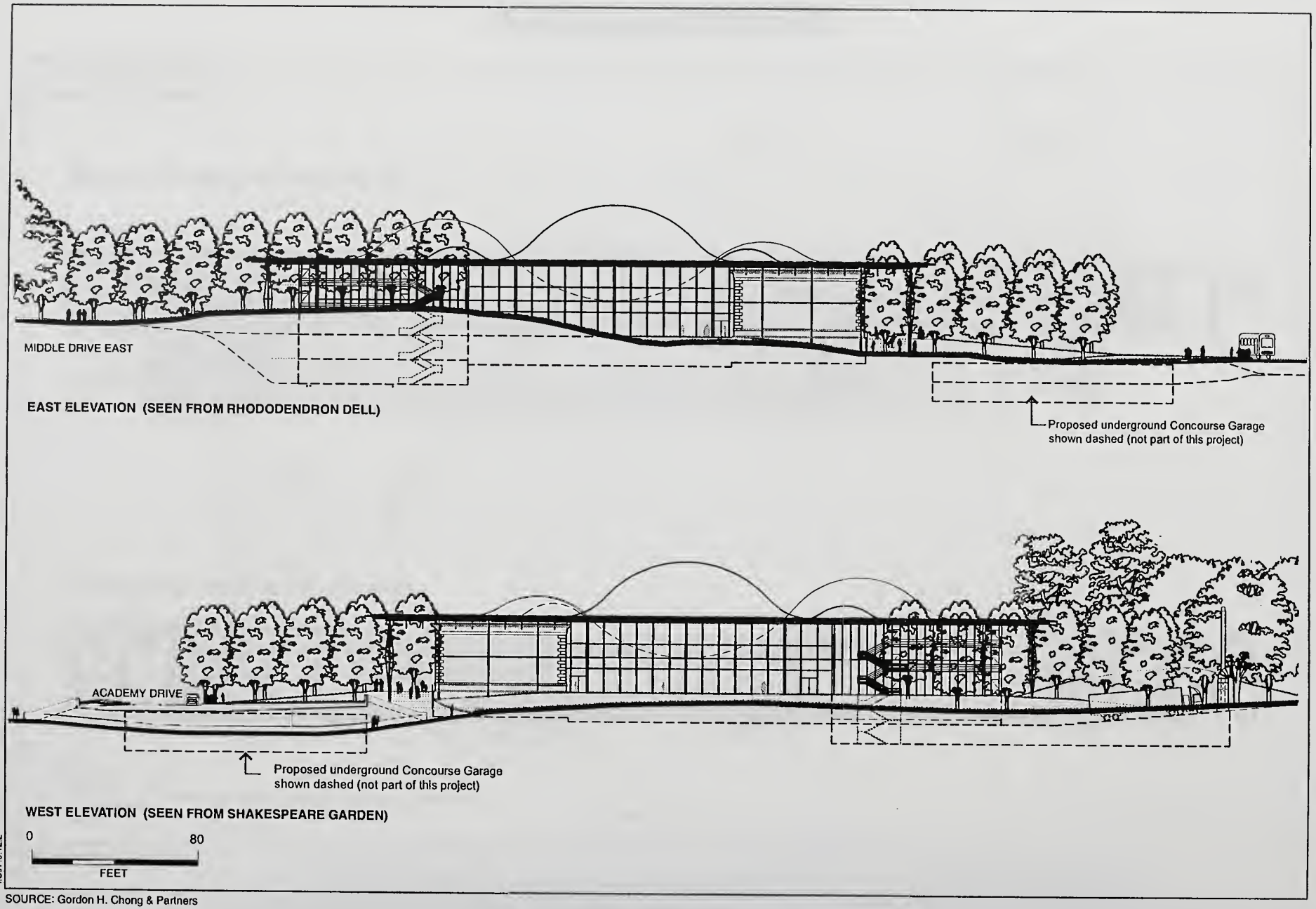
I.S./9.12.02

SOURCE: Gordon H. Chong & Partners

CALIFORNIA ACADEMY OF SCIENCES PROJECT

FIGURE 8: NORTH AND SOUTH ELEVATIONS

PRELIMINARY DRAFT--NOT REVIEWED FOR ACCURACY--SUBJECT TO REVISION



I.S./7.9.12.2

SOURCE: Gordon H. Chong & Partners

CALIFORNIA ACADEMY OF SCIENCES PROJECT

FIGURE 9: EAST AND WEST ELEVATIONS

PRELIMINARY DRAFT--NOT REVIEWED FOR ACCURACY--SUBJECT TO REVISION

The new Academy would be approximately 460 feet long and 280 feet wide, with the edges of the roof extending to approximately 520 feet long by 335 feet wide, and would feature a landscaped roof, the base height of which would be under 40 feet. Above the base, the landscaped roof would undulate to accommodate the Academy's major programmatic components beneath, with the two peak elements over the planetarium and rainforest exhibits reaching a height of about 67 feet, or approximately 13 feet beyond the highest existing point (Morrison Planetarium). These two peaks would be set back approximately 150 feet from the roof's edge along Academy Drive. The roof's shape would follow the contours of these central building components and exhibits and would be intended to read as an organic park-like element unifying the elements of the facility and integrating the structure with the park's adjacent landscaping. The roof would incorporate living plants and glass expanses, and provide limited opportunity for public access. Elements of the roof would also be visible from below, within the Academy, through the glass expanse features in the lobby and central courtyard. The roof would extend beyond the building's walls. The extension would be designed as a trellis, and would include openings to enable trees to grow through the overhang. The roof perimeter would be supported by a series of slender (approximately 8-inch diameter) steel columns. The ground beneath the extended roof would consist of landscaped park area.

Overall, compared to the existing facility, the new Academy would increase the floor area of the Academy's functions on a smaller footprint. The floor area would increase from approximately 350,000 square feet to approximately 380,000 square feet. The footprint would decrease from approximately 240,000 sq. ft. to approximately 205,000 sq. ft.[1] This increase in area on a smaller footprint is possible primarily because the newly-constructed space would include two basement levels. Mechanical space would be accommodated in the basement of the new Academy. Taking into account mechanical functions now in use on the roof of the existing Academy of Sciences buildings, which is not included in the existing floor area, the overall floor area of the new Academy would be similar to current conditions. The new Academy would be designed to accommodate space needs for approximately twenty years after opening. Should additional space be required at that time, it would be accommodated in an additional two-story basement expansion space approximately 80,000 sq. ft. in size, to be located below grade behind the Middle Drive East entrance, to the south of the main facility.

The Academy would retain its general location and orientation. The Academy Drive entrance would be shifted to the northeast to center the facility on the site. The new configuration would achieve a smaller footprint than the existing CAS, and provide an increased setback from the Shakespeare Garden area.

The facility would be served by a vehicle drop-off area and entrance lobby on Academy Drive, and another entrance and drop-off along Middle Drive East. Approximately 73 parking spaces would be removed, and space for about 15 new service and Academy vehicles would be provided. Loading would be provided on the southwest portion of the site, below grade, and adjacent to collections, research and administrative functions. This area would consist of three loading docks, connected by a corridor to the service elevator. These spaces would consolidate the existing loading functions, which currently consist of a series of small docks/loading door areas at the basement level and in the Aquarium area.

Excavation for the project would be required for full basement and partial sub-basement levels. Maximum depths are expected to reach 22 feet below grade at the sub-basement level in selected areas housing the aquarium exhibits and water storage tanks. The full basement level would average 14 feet below grade. Portions of the site would be excavated to approximately 36 feet below grade to remove the existing basement. The project would excavate approximately 40,000 cubic yards (cy) of soil; of the excavated soil, approximately 14,000 cy would be used as fill at the site and up to approximately 26,000 cy would either be reused in the park or hauled off the site.[2]

During construction activities, Academy functions, employees and collections would be temporarily relocated to an existing site or sites within the San Francisco Bay Area. The Academy's program calls for relocating its research and administrative functions and storing some collections and exhibits, while continuing to provide public programs and exhibits at a temporary facility during the rebuilding period.

Other Concourse Area Projects

The approved New de Young Museum project and the proposed Golden Gate Park Concourse Authority Projects under Proposition J are not part of the Academy of Sciences building, and are proceeding independently of the Academy of Sciences project. Unlike the deYoung Museum, the new Academy will not share a foundation wall with the proposed garage. However, coordination among the Academy of Sciences, the Golden Gate Park Concourse Authority, the deYoung Museum, and, the Recreation and Park Department and Commission, and other trustee and responsible agencies is currently occurring through an existing committee convened by the Office of the Architect. This coordination will continue during the implementation of the Academy of Sciences project. Cumulative construction-related impacts are discussed in this Initial Study. Cumulative transportation and air quality impacts will be analyzed in the EIR.

In addition, the Board of Supervisors is currently considering legislation to implement a partial closure of John F. Kennedy Drive on Saturdays. This proposal is not part of the Academy of Sciences project.

Project Schedule, Cost, Approvals and General Plan Policies

Project review and approval is expected to be complete in mid-2003. The development schedule includes closure of the Academy around the same time, followed by an approximately three month period of building hazardous materials abatement. Project staging and demolition would begin in approximately early 2004, and will continue for about nine months. Construction would begin in late 2004 and last about 27 months. Final exhibit work would continue for approximately four months, with the new Academy opening in approximately the Spring of 2008. If the expanded collections space were constructed in the future, the anticipated construction period would be approximately 18-24 months.

The project site is within a P (Public Use) zoning district, and within an OS (Open Space) Height and Bulk district. Permitted uses in a P zoning district include public structures of the city and other governmental agencies when in conformity with the San Francisco General Plan. There are no specific height and bulk limits in the OS height and bulk district. Height and bulk of buildings and structures are determined in accordance with the objectives and policies of the San Francisco General Plan. Approvals for various aspects of the project may be required from the Planning Commission, the Recreation and Park Commission, the Arts Commission, and the Board of Supervisors.

II. SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS

A. EFFECTS FOUND TO BE POTENTIALLY SIGNIFICANT

This Initial Study examines the Academy project to identify potential effects on the environment. On the basis of this study, project-specific effects that have been determined to be potentially significant relate to visual quality, transportation and parking, air quality and climate, and historic resources. These issues will be analyzed in an Environmental Impact Report (EIR). Land use and planning will be discussed in the EIR for informational purposes. Topics noted "TO BE DETERMINED" mean that discussion in the EIR will enable a determination whether or not there would be a significant impact.

B. EFFECTS FOUND NOT TO BE SIGNIFICANT

The following effects of the Golden Gate Park Concourse Authority Projects have been determined to be either insignificant or to be mitigated through measures included in the project; population; utilities and public services; biology; geology and topography; water; energy and natural resources; noise; hazards; and cultural resources (archaeological resources). Those issues are discussed below and require no further environmental analysis in the EIR.

III. ENVIRONMENTAL EVALUATION CHECKLIST AND DISCUSSION

A. COMPATIBILITY WITH EXISTING ZONING AND PLANS

		Not Applicable	Discussed
1.	Discuss any variances, special authorizations, changes proposed to the City Planning Code or Zoning Map, if applicable.		X
*2.	Discuss any conflicts with any other adopted environmental plans and goals of the City or Region, if applicable.		X

The project site is within a P (Public Use) zoning district, and within an OS (Open Space) Height and Bulk district. As a continuation of existing museum activities at this location in Golden Gate Park, the renovated Academy of Sciences would be compatible with existing land use controls, zoning, and would not be anticipated to require amendments to the *San Francisco General Plan* or amendments to zoning. There are no specific height and bulk limits within Open Space Height and Bulk districts. Height and bulk of buildings and structures in Open Space Districts are determined, as part of project approval, in accordance with the objectives, principles and policies and in conformity with the Master Plan (San Francisco Planning Code Section 290). The project would not conflict with the Golden Gate Park Master Plan, which was proposed to implement needed infrastructure and disabled access improvements in Golden Gate Park. The Golden Gate Park Master Plan EIR, certified in July 1998, and adoption of the Master Plan by the Recreation and Park Commission do not preclude responsible planning efforts regarding the future of cultural institutions, such as the Academy of Sciences, in Golden Gate Park. Information and analysis contained in the EIR for the Golden Gate Master Plan will be used and relied upon in the environmental review of the proposed project as appropriate. The project-related parking requirements would either be met by the proposed parking facility approved by the voters in Proposition J, or by an exception, or a variance to the Planning Code. The EIR will discuss necessary project approvals and will review the project in relation to the *General Plan* and City Planning Code.

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

B. ENVIRONMENTAL EFFECTS

1. Land Use. Would the project:

		Yes	No	Discussed
*a.	Disrupt or divide the physical arrangement of an established community?		X	X
b.	Have any substantial impact upon the existing character of the vicinity?		X	X

The project site is located in Golden Gate Park. The first California Academy of Sciences building was constructed on the site in 1916. The Academy of Sciences is surrounded by open space and other museum uses in the park; to the south, west, and east are landscaped open space, and the Music Concourse is north of the project site. The de Young Museum, now under construction, is north of the project site, across the Concourse, and the Hagiwara Japanese Tea Garden is northwest of the project site.

While the project would increase the overall floor area of the Academy of Sciences, as discussed above, the new CAS would continue activities on the site as they currently occur, on a slightly smaller footprint due to efficiencies and expanded basement areas. The project activity would be consistent with existing land uses on the site. The project would not disrupt or divide the physical arrangement of a community nor have a substantial impact upon the existing character of the vicinity. The project would not have a significant effect on land use; however, this topic will be discussed briefly in the EIR for informational purposes.

The scale of the project in relation to surrounding environment will be discussed in the EIR under the Visual Quality topic.

2. Visual Quality. Would the project:

		Yes	No	Discussed
*a.	Have a substantial, demonstrable negative aesthetic effect?		TO BE DETERMINED	
b.	Substantially degrade or obstruct any scenic view or vista now observed from public areas?		TO BE DETERMINED	
c.	Generate obtrusive light or glare substantially impacting other properties?		X	X

The proposed project would rebuild the Academy on the site of the existing Academy in Golden Gate Park. The proposed project would include demolition of 11 existing buildings, a total of approximately 311,400 sq. ft., ranging from approximately 34 to 55 feet in height, which compose the Academy of Sciences, the Steinhart Aquarium, and the Morrison Planetarium. The renovated Academy would feature a landscaped roof, the base height of which would be under 40 feet. Above the base, the landscaped roof would undulate to accommodate the Academy's major programmatic components beneath, with the two peak elements over the planetarium and rainforest exhibits reaching a height of about 67 feet, or approximately 13 feet beyond the highest existing point (Morrison Planetarium). These two peaks would be set back approximately 150 feet from the roof's edge along Academy Drive. Windows in the building's south façade will be solar glass and operable for natural light and ventilation. Windows

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

enclosing the public exhibition area will be clear glass to provide as much transparency with the surrounding park as feasible. The project would change views of the site from the Concourse, Tea Garden Drive, Middle Drive East, and Academy Drive, and would replace views of the existing Academy buildings. The new building would be visible from certain locations within Golden Gate Park. The EIR will identify key view points, including views of the project from the Music Concourse area and other areas within Golden Gate Park.

The project would comply with City Planning Commission Resolution 9212, which prohibits the use of mirrored or reflective glass. Therefore, mirrored glass would not be used, and the building would not result in glare affecting other properties. The EIR will, therefore, not discuss glare. The EIR will discuss the project's design, appearance, possible effects on views and its relation to the scale of surrounding development.

3. Population. Would the project:	Yes	No	Discussed
*a. Induce substantial growth or concentration of population?		X	X
b. Displace a large number of people (involving either housing or employment)?		X	
c. Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?		X	

The proposed project would rebuild the Academy on its current site. Demolition of 11 of 12 existing buildings on site and would temporarily displace the existing museums and approximately 435 employees. During construction activities, museum functions, employees and collections would be temporarily relocated to existing sites within the San Francisco Bay area. The employees would be temporarily dispersed to another location(s) depending on the functions they perform.

The proposed project would not be expected to add a significant number of employees to San Francisco's economy. The number of the professional, operations and educational employees at the site is not expected to increase substantially. The Academy currently has approximately 242 full-time employees and 194 part-time employees. When the Academy reopens, it is anticipated that these numbers will increase by approximately 20 employees, representing an increase of approximately 5%. The number of museum volunteers varies, but may range from 62 to100 during peak periods. This amount is anticipated to be about 80 to 120 during peak periods at the new facility. It is not anticipated that any future expansion would require significant additional staffing, since the additional space would be used primarily for collections, although minimal additional volunteers might be added, bringing the total from about 120 to up to 150. Overall, the museum may add up to approximately 70 employees at full buildout including collection expansion space. This potential increase in employment would be small in the context of total employment in San Francisco.

The Academy's historic attendance has in recent years experienced a steady decline. In 2001, attendance was less than 800,000, with an average daily attendance of about 2,200, as compared to significantly higher numbers in the 1970's and 1980's. By way of example, attendance was closer to two million in 1977, the year the fish roundabout opened. Upon completion of the renovation program, the Academy anticipates a stabilized annual attendance figure of about 1.3 million. [3] This is generally consistent with

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

the 1.4 million projected attendance for the Academy assumed in the certified De Young EIR. The effect of increased numbers of visitors on transportation and related effects will be discussed in the EIR.

The project would not construct housing nor displace existing housing. Given the limited number of new employees anticipated, the proposed project would not create a substantial demand for new housing. Based on the above analysis, no significant physical environmental effects on housing demand or population would occur, and these issues require no further analysis in the EIR.

4. Transportation. Would the project:	Yes	No	Discussed
*a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	TO BE DETERMINED		
b. Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards?	TO BE DETERMINED		
c. Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?		X	
d. Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?	TO BE DETERMINED		

The museum uses could place increased demands on the local transportation system, including increased traffic, transit demand, and parking demand. The EIR will discuss project effects related to transportation and circulation, including intersection operations, transit demand, and impacts on pedestrian circulation, parking, and freight loading, as well as construction impacts. A transportation study by Wilbur Smith Associates is currently being prepared, and will be summarized in the traffic section of the EIR. The EIR will consider cumulative traffic effects both with and without the Concourse projects.

5. Noise. Would the project:	Yes	No	Discussed
*a. Increase substantially the ambient noise levels for adjoining areas?		X	X
b. Violate Title 24 Noise Insulation Standards, if applicable?		X	X
c. Be substantially impacted by existing noise levels?		X	

The California Academy of Sciences, the New de Young Museum, the Hagiwara Japanese Tea Garden, and the Shakespeare Garden are identified in the Golden Gate Master Plan as sensitive noise receptors within Golden Gate Park. These outside areas designated for ceremonies and meditation, and museums and educational facilities may be affected by construction noise resulting from the project as demolition, excavation, and building construction would temporarily increase noise in the project area. The proposed project is not anticipated to require pile driving during construction, which would generate noise and possibly vibrations that could be considered an annoyance by occupants and park users in these nearby areas. Noise levels at receptors near the project site would depend on their distance from the source and

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

on the presence or absence of noise barriers. Vibrations from the construction activities may be felt in adjacent buildings, which include museum, educational, and outdoor park uses. To mitigate any impacts associated with noise generated from construction activities, the project would comply with regulations set forth in the San Francisco Noise Ordinance.

Construction, including demolition, foundation, structure, facade, and interior work would be expected to last about 27 months. Although construction noise could annoy nearby workers and visitors to Golden Gate Park and its facilities, particularly those adjacent to the project site, the impacts would be temporary and would generally be limited to a period of several months during which the foundations and exterior structural and facade elements would be built. Interior construction noise would be substantially reduced by the exterior walls. If temporary pile driving is required during project construction, implementation of the mitigation measure included as part of the project, as identified on p. 28, would ensure that such activity would be limited so as to result in the least disturbance to neighboring uses. Therefore, construction noise impacts would not be considered significant, and the EIR will not discuss them further.

Construction activities at the Music Concourse area related to the Golden Gate Park concourse Authority Projects and the New de Young Museum would also create noise effects. The Academy of Sciences project is proceeding independently of these projects. Cumulative noise effects of the Concourse projects are not considered significant given the different construction schedules of each project within the Music Concourse area of Golden Gate Park. While some construction schedules may overlap, the noise generated by these efforts would be temporary, and therefore, less-than-significant. This issue will not be discussed in the EIR

6. Air Quality / Climate. Would the project:	Yes	No	Discussed
*a. Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?		X	X
*b. Expose sensitive receptors to substantial pollutant concentrations?	TO BE DETERMINED		
c. Permeate its vicinity with objectionable odors?		X	
d. Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?	TO BE DETERMINED		

Construction Emissions

During construction, air quality could potentially be affected for a short period. Heavy equipment could create fugitive dust and emit nitrogen oxides (NOx), carbon monoxide (CO), sulfur dioxide (SO2), hydrocarbons (HC), and particulate matter with a diameter of less than 10 microns (PM10) as a result of diesel fuel combustion. The primary pollutant of concern in fugitive dust would be PM10.

Construction emissions would be short term and temporary, but could still cause adverse effects on local air quality. Bay Area Air Quality Management District (BAAQMD), in its CEQA Guidelines, has

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

developed an analytical approach that obviates the need to quantitatively estimate these emissions. Instead, BAAQMD has identified a set of feasible PM10 control measures for construction activities. The project includes these measures (see p. 28 to reduce the effects of construction activities to an insignificant level. Because the project would include these mitigation measures, it would not cause significant construction-related air quality effects. Overlapping construction schedules with other Concourse projects, however, may create construction emissions that could be cumulatively significant. The EIR will identify the construction periods for all projects occurring simultaneously in the Concourse. These issues will be discussed in a brief air quality section of the EIR.

Emissions from Operations

The extent of foreseeable traffic increases has not been determined. The project could potentially result in air quality impacts if traffic volumes increase substantially. Using data from the traffic study, the EIR will calculate vehicular emissions and compare them to applicable significance thresholds published by the BAAQMD. Carbon monoxide emissions and the possibility of exceeding carbon monoxide standards at congested intersections and nearby sensitive receptors could be of particular concern. These issues will be discussed in a brief air quality section of the EIR.

Shadows

Section 295 of the City Planning Code was adopted in response to Proposition K (passed in November 1984) in order to protect certain public open spaces from shadowing by new structures during the period between one hour after sunrise and one hour before sunset, year round. Section 295 restricts new shadow upon public spaces under the jurisdiction of the Recreation and Park Department by any structure exceeding 40 feet unless the City Planning Commission finds the impact to be insignificant. Planning Code Section 295(a)(3) states that buildings permits for structures that will cast shade or shadow upon properties under the jurisdiction of the Recreation and Park Commission may not be issued with the exception of "[s]tructures to be constructed on property under the jurisdiction of the Recreation and Park Commission for recreational and park-related purposes." The proposed structure includes elements ranging up to 67 feet in height; therefore, a shadow study will be completed and the EIR will discuss its results.

Wind

The proposed project would maintain the approximate overall location and massing of the existing structures on the site and would not substantially change wind conditions or create discomfort for pedestrians and people in nearby seating areas. The proposed project would range up to 67 feet in height; typically, buildings of 100 feet in height or less would not create adverse pedestrian wind conditions. The project site is largely sheltered from prevailing winds by the existing dense forest upwind. As the existing Academy building is not considered a generator of substantial pedestrian-level wind conditions, the similar height and bulk of the proposed project would also not be expected to generate substantial pedestrian-level wind conditions. Therefore, wind conditions impacts would not be considered significant, and the EIR will not discuss them further.

7. Utilities / Public Services. Would the project:	Yes	No	Discussed
a. Breach published national, state or local standards relating to solid waste or litter control?		X	X

b.	Extend a sewer trunk line with capacity to serve new development?	X	X
c.	Substantially increase demand for schools, recreation or other public facilities?	X	X
d.	Require major expansion of power, water, or communications facilities?	X	X

The project would replace existing museum uses with similar uses, although at a slightly greater intensity. The aquarium is served by seawater pumped from Ocean Beach through an underground vault. The system consists of an Ocean Beach vault/pump station and a series of underground pipes running through the park to the site that pull seawater filtered through sand to the Academy. This system would remain in place, with minor upgrades to the vault system. The project would not substantially increase existing solid waste, water demand, or wastewater at the project site. Therefore, the EIR will not discuss these issues further.

As a museum use, the project would not directly change the demand for schools, recreation or other public facilities.

The project site presently receives police and fire protection services, and the project would create little additional demand for fire and police services in the area. Although the project could increase the number of calls received from the area or the level of regulatory oversight that must be provided as a result of the increased concentration of activity on-site, the increase in responsibilities would not likely be substantial in light of the existing demand for police and fire protection services in Golden Gate Park. Furthermore, the increase in demand would not require the construction of any new police of fire prevention facilities. For these reasons, the EIR will not discuss further police or fire protection services.

The project site is already served by power utilities and communication facilities, with some potential reconfiguration to accommodate new construction. The new building would tap into these grids. Therefore, no new power or communications facilities would be necessary as a result of project implementation, and the EIR will not discuss this issue further.

8. Biology. Would the project:		Yes	No	Discussed
*a.	Substantially affect a rare or endangered species of animal or plant, or the habitat of the species?		X	X
*b.	Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?		X	X
c.	Require removal of substantial numbers of mature, scenic trees?		X	X

The proposed project site is within Golden Gate Park, an area where intensive landscaping and landscaping maintenance activities have occurred since 1871. As such, the overall suitability for wildlife habitat and native and naturalized plant species has decreased since the late 1800s. The project site is not

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

identified in the Golden Gate Park Master Plan as a known area of wildlife species habitation or native and/or naturalized plant species and development of the site would not affect any rare, threatened or endangered plants, animals or habitats. The project would not interfere with any resident or migratory species. Therefore, this topic will not be discussed in the EIR.

The Academy of Sciences will retain a consultant arborist to prepare a tree survey report for review of tree species, location, and condition; this information will be used to plan landscape features for the Academy. The effects of this project landscaping in Golden Gate Park will be discussed in the EIR as part of visual quality analysis.

9. Geology / Topology. Would the project:	Yes	No	Discussed
*a. Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction)?		X	X
b. Change substantially the topography or any unique geologic or physical features of the site?		X	X

The Community Safety Element of the San Francisco General Plan contains maps that show areas subject to geologic hazards. The project site is located in an area subject to ground shaking from earthquakes along the San Andreas and Northern Hayward Faults and other faults in the San Francisco Bay Area (Maps 2 and 3 in the Community Safety Element). The project site is not in an area of liquefaction potential (Map 4 in the Community Safety Element), a Seismic Hazards Study Zone designated by the California Division of Mines and Geology.

The Department of Building Inspection, in its review of the building permit application, requires the project sponsor to prepare a geotechnical report that assesses the nature and severity of the hazards at the site and recommends project design and construction features to reduce the hazards. To ensure compliance with all San Francisco Building Code provisions regarding structural safety, when the Department of Building Inspection reviews the geotechnical report and building plans for a proposed project, it determines necessary engineering and design features for the project to reduce potential damage to structures from ground shaking. The project includes a mitigation measure (see pp. 28-29) to facilitate Building Code compliance and reduce potential geological hazards. In this way, potential damage to structures from geologic hazards at a project site would be ameliorated through the Department of Building Inspection requirement for a geotechnical report and review of the building permit application. A geotechnical report was prepared for the Academy by Rutherford & Chekene Consulting Engineers in July 2002.[4] The project site contains loose to semi-compact sands and silty sands in the upper 25 feet, which indicates a high potential for compaction settlement. This issue will be addressed in the building's design as described in the recommended construction measures of the geotechnical report. The project sponsor intends to implement all recommended measures included in the report, as necessary. Based on exploratory borings, the water table appears to be at a depth greater than 50 feet. The site is relatively flat and covered by existing structures indicating that the potential for large-scale landsliding and erosion is very low.

The project would include excavation at the site for construction of a new basement level and partial sub-basement. The basement of the new Academy would extend beneath all of the new buildings. The foundation of the existing buildings would be removed as part of the demolition and excavation process, as the new basement would be deeper than the existing substructures. Maximum depths are expected to

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

occur to approximately 36 feet below grade, as the existing basement would be removed. The sub-basement level in selected areas housing the aquarium exhibits and water storage tanks would be constructed at approximately 22 feet below grade. The new full basement level would average 14 feet below grade. The basement would function as a "concrete box," with a concrete slab on grade and concrete retaining walls to three sides. The south side of the structure would be level with the cut slope. The foundations are anticipated to consist of spread footings. It is not anticipated that pile driving will be required for the facility. Some limited piles may be required for temporary shoring. The project, as proposed, would excavate approximately 40,000 cubic yards (cy) of soil; approximately 14,000 cy of excavated soil would be used as fill at the site and up to approximately 26,000 cy would either be reused in the park or hauled off the site. The Academy would require additional excavation and foundation construction for the two-level, below grade expansion area to the south of the main facility. The project would not significantly alter the topography of the site, or otherwise affect any unique geologic or physical features of the site. No further analysis of geology and seismicity is required in the EIR.

10. Water. Would the project:	Yes	No	Discussed
*a. Substantially degrade water quality, or contaminate a public water supply?		X	X
*b. Substantially degrade or deplete ground water resources, or interfere substantially with ground water recharge?		X	X
*c. Cause substantial flooding, erosion or siltation?		X	X

The project would include excavation to construct a new basement level and partial sub-basement level beneath the existing Academy at about 14 to 22 feet below grade. Previous excavation has occurred on the site to a maximum depth of 36 feet; no groundwater was encountered at this level. Based on groundwater data from a nearby site, the water table appears to be at a depth greater than 50 feet. As such, it is unlikely that dewatering would be required. However, any groundwater encountered during construction would be subject to the requirements of the San Francisco Industrial Waste Ordinance (Ordinance No. 199-77), requiring that groundwater meet specified standards before being discharged into the sewer system. The Bureau of Environmental Regulation and Management of the Department of Public Works would be notified if the project were to require dewatering.

Should dewatering be necessary, the final soils report would address the potential settlement and subsidence impacts of this dewatering. Based upon this discussion, the soils report would contain a determination as to whether or not a lateral movement and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, the Department of Building Inspection would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring. Groundwater monitoring wells and/or instruments would be used to monitor potential settlement and subsidence. If, in the judgment of the Special Inspector, unacceptable movement were to occur during construction, groundwater recharge would be used to halt this settlement. The project sponsor would delay construction if necessary. Costs for the survey and any necessary repairs to service lines under the street would be borne by the project sponsor. The project would include mitigation measures to reduce the potential water quality effects of dewatering (see p. 29) Therefore, no further analysis of water resources is required in the EIR.

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

The project site is almost entirely paved or covered by landscaping and structures. The renovated Academy of Sciences uses would have a footprint of approximately 205,000 sq. ft., as compared to the existing240,000 sq. ft. Therefore, the project would not substantially affect the area of impervious surface at the site or alter site drainage. The project would reduce the overall amount of impervious surface at the site, both through reduction of the building footprint, and through the addition of a vegetated roof structure, approximately 175,000 sq. ft. in area. The new CAS building would fit entirely within the existing CAS site. It would be located generally within the existing footprint, but would occupy a somewhat modified area due to its reconfigured design. Project-related wastewater and storm water would continue to flow to the combined sewer system. During construction, requirements to reduce erosion would be implemented pursuant to California Building Code Chapter 33, Excavation and Grading. During operations, the project would comply with all local wastewater discharge requirements. Therefore, this topic will not be further discussed in the EIR.

11. Energy / Natural Resources. Would the project:	Yes	No	Discussed
*a. Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?		X	X
b. Have a substantial effect on the potential use, extraction, or depletion of a natural resource?		X	

San Francisco consumers have recently experienced rising energy costs and uncertainties regarding the supply of electricity. The causes of these conditions are under investigation and are the subject of much debate. Part of the problem may be that the State does not generate sufficient energy to meet its demands and must import energy from outside sources. Another part of the problem may be the lack of cost controls as a result of deregulation. The California Energy Commission (CEC) is currently considering applications for the development of new power-generating facilities in San Francisco, the Bay Area and elsewhere in the State. These facilities could supply additional energy to the power supply "grid" within the next few years. The project would meet current State and local codes concerning energy consumption, including Title 24 of the California Code of Regulations enforced by the Department of Building Inspection. For this reason, it would not cause a wasteful use of energy. The project-generated demand for electricity would be negligible in the context of overall demand within San Francisco and the State and would not in and of itself require a major expansion of power facilities. Therefore, the energy demand associated with the proposed projects would not result in a significant physical environmental effect and will not be further discussed in the EIR.

12. Hazards. Would the project:	Yes	No	Discussed
*a. Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?		X	X
*b. Interfere with emergency response plans or emergency evacuation plans?		X	X
c. Create a potentially substantial fire hazard?		X	X

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

Hazardous Materials Use

A Phase I Environmental Site Assessment (ESA) of hazardous materials at the project site is has been prepared by Iris Environmental for the Academy.[5] The findings of the ESA are summarized in this section. According to the ESA, several of the Academy's collections (e.g., birds, mammals, reptiles) were originally treated with arsenic to prevent insect and larval damage. Arsenic may be present on various building materials at CAS and may also be present beneath the buildings at CAS.[6] If it were determined by sample collection and analysis that arsenic is present on building materials, the impacted materials would be tracked and managed throughout the demolition. If deemed necessary, some impacted materials may be mitigated prior to demolition. Soils with elevated arsenic concentrations may require excavation and off-site disposal. Mitigation measures to reduce potential impacts to less-than-significant levels are included on pp. 29-30. This issue will not be discussed in the EIR.

Specimens at CAS are preserved using chemicals including formalin, ethyl alcohol, naphthalene, and formaldehyde. Several thousand gallons of ethyl alcohol are currently located in the collections of CAS. [7] These chemicals, as well as freon present in cooling systems at CAS, will be removed from the site prior to demolition.

Approximately the same type and amount of chemicals currently used at the site would also be used during operation of the proposed project, given the similar nature of the program. These chemicals would be handled and stored in accordance with the standard regulatory procedures and practices which are currently in effect at the existing CAS. As a result, chemicals used in the proposed project would not pose a significant hazard to the public, and will not be discussed further in the EIR.

Soil and Groundwater

The site does not appear on the *State of California Hazardous Waste and Substances Sites List*. An underground fuel storage tank was removed in 1998, as further described below. Soil samples collected at that time did not contain detectable levels of diesel or benzene. The Department of Public Health accepted the 1998 report and does not require any further investigation. Recent project geotechnical investigations of the groundwater at the site indicates that the groundwater level is deep within the soil layers, more than 50 feet below the surface.[8] As such, excavation and construction of the proposed project, which would not exceed 36 feet, would not have the potential to impact groundwater. This issue will not be discussed in the EIR.

The project would excavate approximately 40,000 cubic yards (cy) of soil; approximately 14,000 cy of excavated soil would be used as fill at the site and approximately 26,000 cy would be hauled off the site (or some may be reused within the park). Additional excavation would be required for the future expansion area. If residual soil and groundwater contamination were to exist in areas to be excavated, contaminated soil or groundwater could be encountered during excavation and other earth-moving activities. Without appropriate safeguards, such activities could potentially expose workers and possibly the public to chemical compounds in soils, soil gases (gases or vapors, mostly air, trapped within soil), or groundwater. Exposure would most likely occur through skin contact or inhalation. Workers directly engaged in on-site activities would face the greatest potential for exposure to contaminants. The public could also be exposed if access to the construction site were insufficiently controlled. Hazardous materials exposure could cause various short-term or long-term health effects specific to each chemical present at the site if present in sufficient concentration and duration.

Soil and groundwater contaminants would need to be characterized adequately to ensure that appropriate plans are implemented for soil and groundwater handling. Any contaminated soil or groundwater disturbed at the site would need to be managed appropriately, and residual risks to future occupants of the site would need to be kept within acceptable levels as determined by the San Francisco Department of Public Health and other oversight agencies. Unless soil and groundwater management plans are adequately prepared and implemented, the project could pose a significant impact by potentially creating a substantial human health hazard or involving the disposal of materials in a manner that poses substantial hazards.

The project includes a mitigation measure to further characterize soil and groundwater conditions (pp. 29-30). If additional environmental studies conclude that soil and groundwater conditions could pose significant human health or safety hazards, a Site Safety and Health Plan would need to be prepared pursuant to California Division of Occupational Safety and Health requirements and National Institute for Occupational Safety and Health guidance to ensure worker safety. Under these requirements, the Site Safety and Health Plan would need to be prepared prior to initiating any earth-moving activities at the site. The plan would contain policies and procedures to protect site workers from potential health and safety impacts related to contaminated soil and groundwater. The plan would apply to all site activities through the completion of earthwork construction. It would include specific training requirements and personal protection equipment for on-site workers. The Site Safety and Health Plan is not required to include measures to minimize the potential for public exposure. A mitigation measure is included to minimize potential public exposure (pp. 29-30). This issue will not be discussed in the EIR.

Storage Tanks

A 12,000-gallon Underground Storage Tank (UST) was closed in place at CAS in 1998 with oversight from the San Francisco Department of Public Health (DPH) Local Oversight Program.[9] As part of the tank closure, soil samples collected prior to the closure pursuant to Underground Tank Regulations, California Code of Regulations, Title 23 Waters, Chapter 16, Sections 2670 and 2672, indicated that the UST was not a source of contamination. The tank is currently filled with gravel or cement grout and fuel can no longer be introduced or stored in the vessel. It was closed under oversight from the DPH, which required the collection of soil samples prior to closure pursuant to Underground Tank Regulations, California Code of Regulations, Title 23 Waters, Chapter 16, Sections 2670, 2672. Two borings were drilled adjacent to the UST on December 19, 1997. Six soil samples were collected from depths of 5, 10, and 15 feet from the two borings. The soil samples were analyzed for the presence of petroleum hydrocarbons, such as diesel, kerosene, motor oil, and metals. Diesel was detected in one boring at concentrations of 6.0 and 1.0 milligrams per kilogram (mg/kg) at depths of 10 and 15 feet, respectively, and kerosene was detected at a concentration of 2.5 mg/kg at a depth of 10 feet in the same boring. None of the metals were detected at concentrations above the Region IX Preliminary Remediation Goals (PRGs), with the exception of arsenic. Arsenic was detected at a maximum concentration of 7.0 mg/kg, which is above the PRGs for residential and industrial soils (0.39 and 2.7 mg/kg). Mitigation Measure 9a on pp. 29-30 identifies appropriate disposal methods for any soils containing elevated concentrations of hazardous substances, including arsenic. The DPH Hazardous Materials Unified Program Agency issued a Notice of Completion for Underground Storage Tank Closure in Place on September 6, 2000 (CCSF 2000). The notice indicates that based on the analytical results of the soil sampling, further site investigation and cleanup is not required. A copy of the Notice of Completion is reproduced in the Phase I Environmental Site Assessment Report. This topic will not be discussed in the EIR.

A 6,000-gallon Aboveground Storage Tank (AST) was installed at the project site in 1998 to replace the UST. The AST is used to store diesel fuel for use in the site's emergency generators. The AST is within

a fenced enclosure and, to date, has not been known or documented to leak. Inspection of the AST will occur prior to demolition to identify evidence of leaks and to collect soil and groundwater samples to confirm that no releases have occurred, as needed. This topic will not be discussed in the EIR.

Building Materials

Due to the age of the building, it is likely that asbestos-containing materials (ACM) and lead containing materials (LCM) are present.[10] The BAAQMD regulates airborne asbestos and is to be notified ten days in advance of any proposed demolition. Demolition activities involving lead-based paint are to comply with Chapter 36 of the *San Francisco Building Code*. The ordinance requires that containment barriers be at least as protective of human health and the environment as those in the most recent *Guidelines for Evaluation and Control of Lead-Based Paint Hazards* promulgated by the U.S. Department of Housing and Urban Development. Iris Environmental is currently conducting full inspections of the site to determine and inventory the presence of ACM and LCM. Demolition activities of ACM and LCM are regulated by Cal-OSHA and Cal-OSHA/Cal-EPA, respectively. The project sponsor would be required to comply with all applicable Cal-OSHA and Cal-EPA regulations and *San Francisco Building Code* requirements as part of the project. As a result, exposure to hazardous building materials is expected to be less-than-significant, and will not be discussed further in the EIR.

In addition to asbestos and lead, the buildings could also contain polychlorinated biphenyls (PCBs), mercury, or other hazardous materials.[11] In the past, PCBs were commonly installed in electrical transformers and fluorescent light ballasts. Mercury is common in electrical switches and fluorescent light bulbs. It is possible that PCBs are present in several locations on the project site. If hazardous materials exist in facilities to be demolished, they could pose hazards to workers, Golden Gate Park visitors, or the natural environment if not properly removed before demolition. However, the project includes a mitigation measure to reduce the potential health risks associated with potentially hazardous building materials by securing the investigation, removal, and disposal of such materials prior to demolition (see pp. 29-30). The measure would ensure compliance with existing regulations applicable to the management of any potentially hazardous building components. For example, PCBs are regulated under the Federal Toxic Substances Control Act of 1976, and mercury is regulated as a hazardous waste. These existing laws and regulations are designed to ensure the health and safety of workers, neighbors, and the natural environment. Therefore, these issues do not require further analysis and will not be discussed in the EIR.

Fire Safety and Emergency Access

San Francisco ensures fire safety through provisions of the Building Code and Fire Code. Existing buildings are required to meet standards contained in these codes. The proposed project would also conform to these standards, which may include development of an emergency procedure manual and an exit drill plan. In this way, potential fire hazards (including those associated with hydrant water pressure and emergency access) would be addressed during the permit review process.

With implementation of the mitigation measures included as part of the project, as identified on pp. 29-30, potential health and safety issues related to future hazardous materials use, contaminated soil and groundwater, potentially hazardous building components, and fire safety and emergency access would be reduced to less-than-significant levels. Therefore, these issues do not require further analysis and will not be discussed in the EIR.

13. Cultural Resources. Would the project:	Yes	No	Discussed
*a. Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group; or a paleontological site except as a part of a scientific study?	TO BE DETERMINED		
b. Conflict with established recreational, educational, religious or scientific uses of the area?		X	X
c. Conflict with the preservation of buildings subject to the provisions of Article 10 or Article 11 of the City Planning Code?		X	X

Archaeological/Cultural Resources

Archeo-Tec Consulting Archaeologists completed an archival cultural resources evaluation of the project vicinity for potential subsurface historical or prehistoric archaeological resources and to document the history of the area. Potential for the existence of subsurface cultural resources of the prehistoric/protohistoric period (c. 4000 B.C. - A.D. 1775), Spanish/Mexican and Early American era (1776-1848), the Gold Rush era (1849-11857), and the Late 19th Century era (1858-1906) were systematically examined.

There are no currently recorded prehistoric or historical archaeological sites identified within the project site. However, the region's natural state, brush-covered sandy hills and low-lying areas with numerous fresh-water ponds, would have been generally favorable to the establishment of prehistoric or protohistoric settlements and it is possible that subsurface cultural resources from the prehistoric/protohistoric period may be encountered within the project site. There are no currently recorded archaeological sites within the proposed project site. Early prehistoric resources tend to be deeply buried and are not predictable on the basis of historically known topographic features. Early prehistoric sites have been encountered in San Francisco at depths up to 75 feet below the existing grade.

The proposed project site is within Golden Gate Park, an area where intensive fill and grading activities have occurred since 1871. Previous construction activities associated with the existing structures, such as excavation, grading and other ground disturbances, have occurred at the project site. Prior excavation at the site reached a maximum depth of 36 feet. Archival sources indicate that architectural and other associated cultural remnants associated with the 1894 California Midwinter International Exposition may lie buried within the Music Concourse area.

The proposed project would include excavating the project site to a depth of up to about 36 feet to accommodate foundations and new basement areas, and to remove the existing basement. The project would include excavation of approximately 40,000 cubic yards (cy) of soil, and additional excavation for the future expansion area. Although there is no indication of archeological resources at the project site based upon archival evidence, there is some potential for the proposed project to disrupt or adversely affect previously unknown prehistoric resources or historical archaeological resources from the prehistoric/protohistoric period and/or the Late 19th Century period. The project includes a mitigation measure (see 30-32) that would reduce the potential impact to archaeological/cultural resources to a less-than-significant level. Archaeological resources will not be discussed further in the EIR.

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

Historical Resources

There are no historic districts or properties listed in state or federal inventories of historic resources on the proposed Academy project site. The California Academy of Sciences buildings are not listed on the National Register of Historic Places or the California Register of Historical Resources nor are they subject to the provisions of Article 10 or Article 11 of the City Planning Code. The buildings were reviewed in the 1976 Department of City planning City-wide Survey Buildings included in the survey, representing roughly 10% of the City's entire building stock, were rated from a low of "0" to a high of "5." The Academy buildings received a rating of "0" with field notes indicating that potentially historic buildings had been "obscured by newer additions."

Page & Turnbull is currently preparing an Historic Resources Study to evaluate the historical significance of the Academy, and to identify potential project-related effects on historic architectural resources, if any. The EIR will present a summary of the findings in the study.

Adjacent historic resources include the Hagiwara Japanese Tea Garden, approximately 800 feet northwest of the project site, which is listed in the California Register of Historical Resources as a result of a formal determination of eligibility for individual listing on the National Register of Historic Places in 1994. Golden Gate Park, as a whole, and the Spreckels Temple of Music, individually, appear eligible for the National Register of Historic Places. In addition, the Francis Scott Key Monument at the east end of the Music Concourse is listed as San Francisco City Landmark No. 96. The proposed project would not directly or physically effect on any of these resources, which are considered significant historic resources under CEQA. The potential impacts of the project on historic resources will be further discussed in the EIR.

C.	**OTHER**	Yes	No	Discussed
	Require approval of permits from City Departments other than the Department of City Planning or Bureau of Building Inspection or from Regional, State or Federal Agencies?	X		

D.	**MITIGATION MEASURES**	Yes	N/A	No
1.	Could the project have significant effects if mitigation measures are not included in the project?	X		
2.	Are all mitigation measures necessary to eliminate significant effects included in the project?			X

The following are mitigation measures related to topics determined to require no further analysis in the EIR. The EIR will contain a chapter describing mitigation measures proposed as part of the project and measures that would be, or could be, adopted to reduce potential adverse project effects identified in the EIR.

Construction Noise

1. The project sponsor would require project construction contractor(s) to predrill holes to the maximum depth feasible on the basis of soil conditions. Contractors would be required to use construction equipment with state-of-the-art noise shielding and muffling devices. If pile driving is required, the project sponsor would also require that contractors limit pile driving activity to result in the least disturbance to neighbors, as determined by the Department of Building Inspection.

Air Quality / Climate

2. The project sponsor would require the contractor(s) to spray the site with water during excavation and construction activities; spray unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soil, sand or other such material; and sweep surrounding streets during excavation and construction at least once per day to reduce particulate emissions.

3. Ordinance 175-91, passed by the Board of Supervisors on May 6, 1991, requires that non-potable water be used for dust control activities. Therefore, The project sponsor would require that the contractor(s) obtain reclaimed water from the Clean Water Program for this purpose. The project sponsors would require the project contractor(s) to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as a prohibition on idling motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions from equipment that would be in frequent use for much of the construction period.

Geology / Topography

4. One or more geotechnical investigations by a California-licensed geotechnical engineer are included as part of the project. The project sponsor and its contractors would follow the recommendations of the final geotechnical reports regarding any excavation and construction for the project. The project sponsor would ensure that the construction contractor conducts a pre-construction survey of existing conditions and monitors the adjacent buildings for damage during construction, if recommended by the geotechnical engineer.

5. If dewatering were necessary, the final soils report would address the potential settlement and subsidence impacts of this dewatering. Based on this discussion, the soils report would determine whether or not a lateral movement and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey were recommended, the Department of Building Inspection would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring. Instruments would be used to monitor potential settlement and subsidence. If, in the judgment of the Special Inspector, unacceptable movement were to occur during construction, groundwater recharge would be used to halt this settlement. The project sponsor would delay construction if necessary. Costs for the survey and any necessary repairs to service lines under the street would be born by the project sponsor.

   If dewatering were necessary, the project sponsor and its contractor would follow the geotechnical engineers' recommendations regarding dewatering to avoid settlement of adjacent streets, utilities, and buildings that could potentially occur as a result of dewatering.

6. The project sponsor and its contractor would follow the geotechnical engineers' recommendations regarding installation of settlement markers around the perimeter of shoring to monitor any ground movements outside of the shoring itself. Shoring systems would be modified as necessary in the event that substantial movements are detected.

Water Quality

7. If dewatering were necessary, the project sponsor would follow the recommendations of the geotechnical engineer or environmental remediation consultant, in consultation with the Bureau of Environmental Regulation and Management of the Department of Public Works, regarding treatment, if any, of pumped groundwater prior to discharge to the combined sewer system.

   If dewatering were necessary, groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this were found to be necessary by the Bureau of Environmental Regulation and Management of the Department of Public Works to reduce the amount of sediment entering the combined sewer system.

8. The project sponsor would require the general contractor to install and maintain sediment traps in local storm water intakes during construction to reduce the amount of sediment entering the combined sewer system, if this were found to be necessary by the Bureau of Environmental Regulation and Management of the Department of Public Works.

Hazards

9. In addition to local, state, and federal requirements for handling hazardous materials and soil and groundwater containing chemical contaminants, the project sponsor would enter into a voluntary remedial action agreement with the Department of Public Health pursuant to Health and Safety Code Section 101480 et seq. At a minimum, the project sponsor would undertake the following work and any additional requirements imposed by the Department of Public Health under the agreement.

   a. A Phase II Environmental Site Assessment shall be prepared for the project site. It would involve the collection and analysis of soil and groundwater samples as directed by the site assessment consultant. The project sponsor would conduct a soil and groundwater investigation to assess whether possible chemical releases from within the CAS facility may have degraded subsurface conditions through the introduction of hazardous chemicals including arsenic. This assessment would be completed by a Registered Environmental Assessor, Registered Geologist, or similarly qualified individual prior to initiating any earth-moving activities at the project site.

      If it were determined by sample collection and analysis that arsenic (or any other chemical of concern) is present on building materials, the impacted materials would be tracked and managed throughout the demolition. If deemed necessary, some impacted materials may be mitigated prior to demolition. Soils with elevated arsenic concentrations (or any other chemical of concern) may require excavation and off-site disposal. Soils with elevated arsenic concentrations (or any other chemical of concern) will be disposed of off-site in accordance with California hazardous waste disposal regulations (CCR Title 26) or will be managed in place with approval of the California Department of Toxic Substances Control (DTSC) or the Regional Water Quality Control Board (RWQCB).

If the Phase II assessment results in earth-moving activity that requires preparation of a Site Safety and Health Plan, in addition to measures that protect on-site workers, the plan would include measures to minimize public exposure to contaminated soils. Such measures would include dust control, appropriate site security, restriction of public access, and posting of warning signs, and would apply from the time of surface disruption through the completion of earthwork construction.

b. Prior to any demolition or excavation at the project site, surveys would be conducted to identify any potentially hazardous materials (other than asbestos and lead) in existing buildings or building materials. At a minimum, these surveys would identify any polychlorinated biphenyls, mercury, or other hazardous materials that would require removal and disposal before demolition. These surveys would be completed by a Registered Environmental Assessor or a similarly qualified individual.

c. All reports and plans prepared in accordance with this mitigation measure would be provided to the San Francisco Department of Public Health and any other agencies identified by the Department of Public Health. When all hazardous materials have been removed from existing buildings, and soil and groundwater analysis and other activities have been completed, as appropriate, the project sponsor would submit to the San Francisco Planning Department and the San Francisco Department of Public Health (and any other agencies identified by the Department of Public Health) a report stating that the mitigation measure has been implemented. The report would describe the steps taken to comply with the mitigation measure and include all verifying documentation. The report would be certified by a Registered Environmental Assessor or a similarly qualified individual who states that all necessary mitigation measures have been implemented.

Cultural Resources

10. Based on the potential that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of a qualified archeological consultant having expertise in California prehistoric and urban historical archeology. The archeological consultant shall prepare an archeological research design (ARD) that shall include an historical context, an assessment of research potential in terms of research questions, and an evaluation of the significance as an historical resource (CEQA Guidelines Sect. 15064.5 (a)(c)) of the expected archeological resources. The archeological consultant shall undertake an archeological monitoring program. The archeological monitoring program, whether or not significant archeological resources were encountered, shall result in a written report of findings to be submitted first and directly to the Environmental Review Officer (ERO). Archeological monitoring and/or data recovery programs required by this measure could suspend project construction activities for up to a maximum of four weeks. At the direction of the ERO, the suspension of project activities can be extended beyond four weeks only if such a suspension is necessary and is the only feasible means to reduce to a less than significant level potential effects on a significant archeological resource as defined in CEQA Guidelines Sect. 15064.5 (a)(c).

Archeological monitoring program. The archeological monitoring program shall minimally include the following provisions:

- The ERO in consultation with the project archeologist shall determine what project activities shall be archeologically monitored. In most cases, any soils disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archeological monitoring because of the potential risk these activities pose to archaeological resources and to their depositional context;
- The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource;
- The archaeological monitor(s) shall be present on the project site until the ERO has, in consultation with the archeological consultant, determines that project construction activities could have no effects on significant archeological deposits;
- The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;
- If an intact archeological deposit is encountered, all soils disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/construction crews and heavy equipment until the resource is evaluated. If in the case of pile driving activity (foundation, shoring, etc.), the archeological monitor has cause to believe that the pile driving activity may affect an archeological resource, the pile driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall, after making a reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit, present the findings of this assessment to the ERO.

If the ERO in consultation with the archeological consultant determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, either:

A) the proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource; or

B) an archeological data recovery program shall be implemented.

If an archeological data recovery program is required by the ERO, the archeological data recovery program shall be conducted in accord with an archeological data recovery plan (ADRP). The project archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP. The archeological consultant shall prepare a draft ADRP that shall be submitted to the ERO for review and approval. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain.

Human Remains, Associated or Unassociated Funerary Objects. The treatment of human remains and of associated or unassociated funerary objects discovered during any soils disturbing activity shall comply with applicable State and Federal Laws, including immediate notification of the Coroner of the City and County of San Francisco and in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Pub. Res.

Code Sec. 5097.98). The archeological consultant, project sponsor, and MLD shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects (CEQA Guidelines. Sec. 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects.

Final Archeological Resources Report. The archeological consultant shall prepare a Draft Final Archeological Resources Report (FARR) evaluating the historical importance of the archeological resource and describing the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s). Information that may put at risk any archeological resource shall be provided in a separate removable insert within the draft final report.

Copies of the Draft FARR shall be sent to the ERO for review and approval. Once approved by the ERO copies of the FARR shall be distributed as follows: the San Francisco Redevelopment Agency (number of copies as required by SFRA); California Archaeological Site Survey Northwest Information Center (1 copy); and the President of the Landmarks Preservation Advisory Board (1 copy). The Major Environmental Analysis division of the Planning Department shall receive three copies of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest or interpretive value, the ERO may require a different final report content, format, and distribution than that presented above.

E. ALTERNATIVES

The EIR will discuss a variety of alternatives to the project that would reduce or eliminate any significant environmental effects. It will include a brief discussion of why an alternative site is infeasible and will also analyze the following:

- No-Project Alternative
- Renovation/Reuse Alternative

F. MANDATORY FINDINGS OF SIGNIFICANCE

		Yes	No	Discussed
*1.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or pre-history?	TO BE DETERMINED		
*2.	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?		X	X

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

*3. Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects.) TO BE DETERMINED

*4. Would the project cause substantial adverse effects on human beings, either directly or indirectly? TO BE DETERMINED

If the existing Academy buildings are determined historically significant, their proposed demolition could result in a significant impact on those resources. This issue will be discussed in the EIR. The proposed project could contribute to cumulative traffic and air quality impacts; these topics will be discussed in the EIR. The project is not anticipated to cause a substantial adverse direct or indirect effect on human beings, nor does it have the potential to achieve short-term, to the disadvantage of long-term, environmental goals.

G. ON THE BASIS OF THIS INITIAL STUDY

I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning. ☐

I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by, or agreed to by, the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared. ☐

I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers , in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared. ☐

I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers , in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared. ☐

I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required. ☒

7-24-2002
Date

for Wilkey Olyato

Paul Maltzer
Environmental Review Officer
for
Gerald G. Green
Director of Planning

* Derived from *State CEQA Guidelines* Appendix G; normally a significant effect.

Endnotes

[1] Future expansion would add a 15,000 sq. ft. courtyard for a total footprint at 217,500 sq. ft. The remainder of the expansion area would be below grade, with a footprint of approximately 35,000 sq. ft.

[2] These figures do not include excavation for the expansion area, estimated to be 23,400 cubic yards of soil, the majority of which would be off-hauled from the site.

[3] Economics Research Associates, *Attendance Potential*, February 27, 2002.

[4] Rutherford & Chekene Consulting Engineers, *Draft Report Geotechnical Investigation, New California Academy of Sciences, Golden Gate Park, San Francisco, California*, July 2, 2002.

[5] Iris Environmental, *Phase 1 Environmental Site Assessment, California Academy of Sciences, San Francisco, California*, September 19, 2002.

[6] Ibid, p. 3.

[7] Ibid, p.15.

[8] Rutherford & Chekene Consulting Engineers, *Draft Report Geotechnical Investigation, New California Academy of Sciences, Golden Gate Park, San Francisco, California*, July 2, 2002, p.23.

[9] Iris Environmental, *Phase 1 Environmental Site Assessment, California Academy of Sciences, San Francisco, California*, September 19, 2002, p. 16.

[10] Ibid, p.13.

[11] Ibid, p.13 - 14.